REMARKS

Claims 1-13 remain pending in the application. Claims 14-27 were previously canceled and withdrawn from consideration.

Claim 1-6, 12 and 13 stand rejected under 35 U.S.C. 102(b) as being anticipated by James et al. (U.S.P. No. 5,479,042) (James).

The Office Action states that "James describes a micro-electromechanical system (MEMS) switch comprising:" Applicants respectfully traverse this assertion for the following reasons:

Applicants contend that James' invention addresses a micromachined relay, which teaches away from the MEMS switch taught by the Applicants.

Applicants submit that James device is micromachined in a conventional way, i.e., since it uses polysilicon which is a high temperature process. James further bonds two different substrates. (See Abstract). Applicants, on the other hand, require a single substrate and low temperatures in order to make the MEMS device of their invention fully integratable in a CMOS manufacturing line.

Furthermore, Applicants submit that the micromachined relay of James differs totally from the MEMS switch taught by the Applicants in its construction, mode of operation, and method of fabrication. Thus, the respective devices are unrelated from each other. More particularly:

In col. 7, lines 53-58, James recites:

"The relays 10 of this invention have certain important advantages. They can be made of known micromachining techniques at a relative cost. Each relay 10 provides a reliable engagement between the contacts 32 and 44".

In contrast, Applicants do not teach a micromachined device. Applicants teach a MEMS switch which cannot be manufactured by micromachining techniques, since such a technique is incompatible with a CMOS manufacturing line.

Moreover, in col. 7, lines 47-52, James recites:

"By forming the relays 10 on a wafer 70, as many as nine (9) relays may be formed on the wafer in an area having a length of approximately three thousand microns (3000μ) and a width of approximately twenty five thousand microns (25000μ)."

In contrast, Applicants teach a MEMS switching device having minimal dimensions, in the order of 1 micron (1μ).

James further recites in col. 6, lines 24-33:

"When a suitable voltage such as a voltage in the range of approximately fifty volts (50V) to one hundred volts (100V) is applied from the external source 55 to the bonding pad 54 and is introduced to the conductive layers 50, a voltage difference appears between the layers 50 and the polysilicon layer 22, which is effectively at ground. This voltage difference causes a large electrostatic field to be produced in the cavity16 because of the small distance between the contacts 32 and the contacts 44."

James further quantifies the electrostatic field created in col. 6, lines 61-64:

" Since the electrostatic field between the contact 32 and the contacts 44 is quite large as in the order of megavolts per meter, electron s may flow to or from the insulating layer 24"

In contrast, Applicants MEMS switch uses at best a voltage in the range of 2 to 3 volts, and dissipates a minimum amount of heat. Thus, James by teaching a large device

designed to handle large amounts of currents and dissipating large amounts of heat teaches away from what Applicants deem to be their invention.

Applicants contend that if the voltages and/or electrostatic field described by James for his micromachined relay were applied to the MEMS switch taught by the Applicants, the MEMS device taught by the Applicants would blow up instantly and, in addition, it would destroy any other MEMS device in the vicinity thereof.

In conclusion, Applicants contend that their MEMS switch is unrelated to the micromachined relay taught by James et al.

If *arguendo*, if one were to manufacture a MEMS switch having the characteristics of the micromachined relay of James, clearly which is a *non secatur*, the MEMS switch thus created would not be operable since it would be instantly destroyed by the magnitude of the voltage, currents and electrostatic fields required by James' device.

In view of the foregoing, Applicants believe that the MEMS switch of their invention teaches away from the micromachined relay taught by James.

Thus, Applicants believe that all the rejected claims are free of rejection under 35 U.S.C. 102(b) over James, and respectfully request that the Examiner reconsider and withdraw the rejection of the stated claims based thereon.

In view of the foregoing amendments and arguments, Applicants respectfully request that all the rejections and objections to this application be reconsidered and withdrawn and that the Examiner pass all the pending claims to issue.

Should the Examiner have any suggestions pertinent to the allowance of this application, the Examiner is encouraged to contact Applicants' undersigned representative.

Respectfully submitted,
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